

What is claimed is:

1. A fuel cell comprising:

an electrolyte electrode assembly including a pair of  
5 electrodes and an electrolyte interposed between said  
electrodes;

separators for sandwiching said electrolyte electrode  
assembly, a reactant gas supply passage and a reactant gas  
discharge passage extending through said separators in a  
10 stacking direction, at least one of said separators having a  
reactant gas flow field connected between said reactant gas  
supply passage and said reactant gas discharge passage for  
supplying a reactant gas to said electrode;

a seal member provided around said electrode for  
15 sealing said reactant gas flow field, said reactant gas  
supply passage, and said reactant gas discharge passage; and

a filling seal provided tightly in contact with at  
least an outer end surface of said electrode for preventing  
leakage of said reactant gas at an outer region of said  
20 electrode.

2. A fuel cell according to claim 1, wherein said  
filling seal is provided near said reactant gas supply  
passage and near said reactant gas discharge passage.

25 3. A fuel cell according to claim 1, wherein said  
reactant gas flow field includes at least one U-Turn region,

and said filling seal is provided near said U-Turn region for preventing leakage of said reactant gas from said U-Turn region.

5           4. A fuel cell according to claim 1, wherein a seal groove is formed around said reactant gas flow field, said reactant gas supply passage, and said reactant gas discharge passage;

          said seal member is provided in said seal groove; and

10           said filling seal is provided in a part of a clearance between said seal member and said outer end surface of said electrode.

15           5. A fuel cell according to claim 1, wherein at least one of said separators has a coolant flow field for supplying a coolant to cool said electrode;

          an additional filling seal is provided in a part of a clearance between said coolant flow field and said seal member for preventing leakage of said coolant into said clearance.

20           6. A fuel cell according to claim 5, wherein a coolant supply passage and a coolant discharge passage extend through said separators in said stacking direction; and

25           said additional filling seal is provided near said coolant supply passage, and near said coolant discharge

passage.

7. A fuel cell according to claim 5, wherein said coolant flow field includes at least one U-Turn region, and said additional filling seal is provided near said U-Turn region for preventing leakage of said reactant gas from said U-Turn region.

8. A fuel cell according to claim 6, wherein a seal groove is formed around said coolant flow field, said coolant supply passage, and said coolant discharge passage, and said seal member is provided in said seal groove.